

Available online at www.sciencedirect.com**SciVerse ScienceDirect**

Procedia Engineering 20 (2011) 496 – 504

**Procedia
Engineering**www.elsevier.com/locate/procediaThe 2nd International Building Control Conference 2011

Towards Usable Malaysian Shopping Centre

A. A. Abdul-Ghani^a, M. Y. Hamid^b, S. N. Harun^a, N. Mohd-Noor^a^aMARA University Of Technology, 40000 Shah Alam, Malaysia^bMARA University Of Technology, Perak Campus, 32610 Seri Iskandar, Malaysia

Abstract

This paper explores the definition and concept theoretical of usability in built environment. Usability which the main focus of interest in product design based has been adapted in creating the usable of Malaysia Shopping Centres. With the hasty number growth of shopping centres in Malaysia, the competition among of those commercial retailers is seen as crucial. The changes format of latest design and various types of user, this scenario makes our shopping centres management more challenging. Therefore, this paper looks on the usability as hidden quality in determining the commercial success. By considering the user experience in it, this paper also looks on its attributions. The dimensions of usability gained through thorough literature reviews can be set as reference in creating a usable shopping centre.

© 2011 Published by Elsevier Ltd. Open access under [CC BY-NC-ND license](#).

Selection and/or peer-review under responsibility of Universiti Teknologi Mara Perak and Institution of Surveyors Malaysia (ISM).

KeyWords: Attributions; User Experience; Shopping Centres; Usability

1. Introduction

In Malaysia, recently, the landscape of development has changes where the numbers of housing development escalates especially in the centre heart of Kuala Lumpur. In providing the facilities to the living community, the erection of shopping malls is one of the strategies adopted by the developer. As a result, a massive numbers of shopping malls scattered all over around us.

The shopping malls are a platform of various activities and can be classified as workplaces for the tenant. According to McGoldrick and Thompson [1] a shopping centre has been defined e.g. as a

*Corresponding author.

Email address: aniffaadia@yahoo.co.uk

“concentration of shops and other commercial establishments which are in individual ownership”. As quoted by Alho, J et. al [2], a shopping centre is a workplace for tenant organizations and for consumers it is a consumption and entertainment environment. Shopping centers is platform of various interface integration of physical, social, and virtual different actors. Changes in customer environments with different backgrounds , cultures, profiles and also the latest format in shopping centre design make the management more challenging.

Therefore, it is essential to look at the usability of the shopping centres. Usability is a jargon that previously adopted in the Information Communication Technology (ICT) for the purpose of product design. However, this term of ‘usability’ has been introduced widely in European countries when talking about the effect of built environment to the user. As stated in facilities management doctrine, production resources like building and occupants should bind together closely in achieving the organization goal. This is where the significant of usability lays as ‘parameter’ of service excellence in the context of delivering service to the consumer who defined as the ‘end user’.

The purpose of this paper is to explores the literature review made to be applied in usability dimensions in Malaysia Shopping Centres in order to determine and develop the Usability framework. In addition, this paper seeks the adoption concept of user design in Malaysian Shopping Centres.

2. Definition

Previous scholars have highlighted several attempts to classify retail trade. Lim et. al., [3], Ahmad et. al., [4]; have separated retail trade into large scale and small scale establishment. Single propriety stores and non-store operators like hawkers, peddlers and market stalls are classified as small scale retailers. On the other hand, superstore, discount store, hypermarket, department store, supermarket and shopping centre are categorized as large-scale retailers.

Notwithstanding with the entire list given above, it is necessary to bear in mind that shopping centre is a part of shopping complex and retail. Mohd Said [5] stated that retailing refers to all activities directly related to the selling of small quantities of goods and services, at a profit, to the ultimate customers for personal consumption and non- business use.

Therefore, to tell difference between those retailers and make it more distinct and clearer , herewith a list of definitions made on several huge retailers.

TYPE	DEFINITION	REFERENCE
Business Park	An area that is specially designed to have business offices, small factories, etc.	Cambridge Dictionary
	A landscaped area containing high tech, other amenities for business purposes, as distinct from high-tech park or a science park. Building density is lower than would be usual in a traditional industrial estate. Business Parks are preferentially located where motorway, rail and airport communications are within a short distance.	Narains [6]
Shopping Complex	Shopping complex include multi – unit retail under one covered walkway in order to establish sustains business activity by encouraging pedestrian flow through. Shopping centres, shopping arcades and hypermarket (stand alone) are a part of shopping complex	NAPIC [7]
Shopping Centre	Shopping centre as a group of retail and other commercial establishments that is planned, developed, owned and managed as a single property, with on-site parking provided.	International Council Of Shopping Centre (ICSC) 2004
	Shopping centre can be defined as a building that contains many units of shops but is managed as a single property. Shopping centres today are more complex in terms of size, type and characteristics.	Michael Pitt, Zairul N Musa [8]
Shopping Arcades	Shopping arcades are dominant retail shops along one or both sides for trade where the retail used not less than 75% of the nettable area.	NAPIC [7]
Shopping Mall	Shopping mall as a large building with a lot of shops, restaurant and sometimes a cinema.	Mc Millan Dictionary

Table 1.0 : Definition of retailers

3. Malaysian Shopping Mall

Shopping centre in Malaysia has been evolving since early 1970s with the launching of first Malaysia future shopping centre in March, 1973 which is famously known as Ampang Park. Located strategically in the middle of Kuala Lumpur, this shopping centre is the pioneer for the entire fast pace shopping centre development in Malaysia. After the completion of Ampang Park, there are numerous shopping centres erected around Klang Valley, concentrated on around Kuala Lumpur and Petaling Jaya districts. Until 1990s then the erection of shopping centre started to scattered all over Kuala Lumpur, Selangor and other states. As stated in the table below, it can be seen that it is more than 200 shopping centres around Malaysia where Kuala Lumpur is the centre of shopping hub currently.

The shopping hub in Kuala Lumpur contains various design and theme. Apart of them are designed purposely for the business, family and entertainment concept and certain are concentrated on IT or computer things. This inadvertently enhances the features of Kuala Lumpur shopping centres.

Table 2.0 : Shopping Complexes in Malaysia

STATE	AREA (km2)	SHOPPING CENTRES		HYPERMARKETS			
		AEON/ Jusco	Others	Tesco	Carrefour	Giant	Others
Johor	19,210	2	39	5	2	11	14
Melaka	1,664	1	9	2	0	4	8
N. Sembilan	6,686	6	5	3	1	4	2
Selangor	8,104	4	45	11	9	14	1
K.L/ W.P	243	2	39	4	5	12	0
Perak	21,035	0	11	6	0	4	2
Kedah	9,500	2	17	4	0	3	2
Pulau Pinang	1,048	0	19	4	1	5	3
Perlis	821	0	1	0	0	0	1
Kelantan	15,099	0	4	1	0	1	1
Terengganu	13,035	0	5	0	0	2	0
Pahang	36,137	0	9	0	0	2	9
Sarawak	124,450	0	42	0	0	3	0
Sabah	73,631	0	23	0	0	5	4

With the highest number of shopping centres in one area, Kuala Lumpur shows very competitive retail industries. As reported by The Star dated 7th August, 2010, there would be oversupply of retail market in Malaysia when there are trend of construct multiple malls in one location. The surrounding shopping centres tend to compete with each other in attracting consumers to consume more and visit frequently to their shopping centres. Other than business strategy that can influence the business target, the application of appropriate design does improve the business profit. As highlighted by Taek Park and Heung Park [9], commercial successes can be sustained through the usage of ‘usability’ as a strategic competitive weapon.

Therefore, this paper seeking the significant of usability studies to be adapted in Malaysia shopping centres. This is due to usability is a part of problem solving. In addition, it is strengthened by Alexander [10], which highlighted that in order to have better understanding on user’s experience and its positive feedback to the organization, it is paramount to understand and to apply the concepts of usability.

Notwithstanding, the interest of doing usability as major focus of research is that Malaysia is lacking of research in usability of shopping centres. Most of studies done on Malaysia shopping centres concentrated on the marketing, branding, management, parking, retailing. [11]. Therefore, there is necessity to carry out this research in order to fill up the gap left by the previous scholars.

4. Significance of user involvement in design

The involvement of the user in design has been previously recognized before this. As what been defined in architecture context, the involvement of the user is widely known as participatory design. Luck [12] stated that participatory design is a collaboration activity, which participated by the users in various

situations and activities. In addition, Sanoff [13] illustrated that this participatory design can be seen as the direct involvement of public in decision making to determine the quality and direction of their lives. Binder [14] shared the same view that it is shifting role of user, from design recipient to an engaged design decision maker. Most consultation and placation in designing building process involving input from the user and interaction between the user and architect is vital at this stage.

User is essential element in designing any product design especially designing building. According to Stanton and Young [15], user participation is needed in providing and interpreting data about people, their behavior and cognition through the analysis, design guidelines and performance data. These ergonomic major objectives are ensuring the products are safe, usable, easy to learn and effective- largely functional, performance related issues.

However, there are a lot of critics made on this participatory concept since most of the suggestion made by this widely public engagement processes were ignored [16][17][18][19][12]. In addition, that those human factors techniques are analytical tools where it lacks of integration between analysis and synthesis. Analysis provides the user capabilities and their reaction to specific design variables, whereas synthesis is the collaboration of human and technology capabilities to produce workable objects. As mentioned by Hasdogan [20], in creating the useful design, the designer or practitioners need to bridge this gap in stimulates well-conceived, user-centered design ideas.

5. Usability concept

One of the latest dimensions in product designing has been introduced in the built environment field. This dimension needs participation of vital roles of user in providing the input including their experience. The 'usability' is a common jargon since 1950s; which applied widely in Information Communication Technology (ICT) and software development. According to ISO 9241-11, usability means the extent to which a product can be used by specified users to achieve specified goals with effectiveness, efficiency, and satisfaction in a specified context of use. In enhancing the meaning of the word, ISO 9241-11:1998 defined standard usability as: *"[...] the effectiveness, efficiency and satisfaction with which a specified set of users can achieve a specified set of tasks in a particular environment."*

This jargon has been introduced to the built environment world which has been identified influencing the work performance, thus impacting on the overall organizational success [21]. In making that definition clearer, Alexander [21] draws a detail explanation on this which illustrated as follows: Effectiveness - whether the users can achieve what they want to do with the product; Efficiency – how long it takes them to achieve it and ;Satisfaction – their feelings and attitude towards the product.

Usability means "getting closer to the user", and for the purpose of the ease and efficiency of workplace facility usage, the user perceptions should be the focus subject. In addition, as a phenomenon that has three characteristics: a) the user and his or her knowledge; b) the product, its characteristics and the functions it provides; c) the situation, the tasks and the goals in which the product is used.

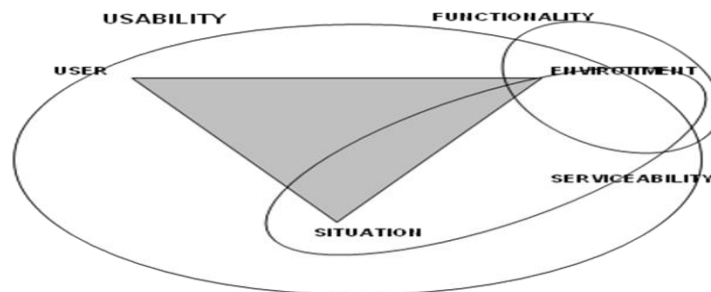
Usability can be used as one of tool in evaluating the building. The uniqueness of the usability in evaluating the building is the user experience is taken into consideration. Although the term "user experience" has been used extensively in recent years, it has been associated with a wide range of meanings [22]. As mentioned by Macdonald [23], user experience's in interaction with a product is a

complex subjective phenomenon. Unlike usability, user experience tends to include wider human experience dimensions (such as pleasure, fun, and other emotions) and also may have a temporal or longitudinal component. The user experience is a blend of company's physical performance and the emotional evoked, intuitively measured against customer expectations across all the moments of contact [24]. Experience furthermore, is process-oriented including all the moment of contacts and emotions during the experience (Schmitt 1999). User experience depends upon the attributes of the product such as behaviour, logic, sound, feel, look, smell and relating to the user for instance mood, goals, tasks, perception, expectations and capabilities.

In promoting the usage of usability as one of the qualities in the building, Taek Park and Heung Park [9] highlighted that dimension of usability can be listed as user related and product related. As for user related, the dimensions are physical comfort, intellectual comfort and psychological comfort. Notwithstanding the product related should be envisaged with the dimension of time saving, space saving and maintenance free.

6. Usability of shopping centre

In term of usability of the shopping centre, the major concern of the research are the functionality, serviceability of the centre and the experience of the user who use it. Functionality of the shopping centre is concerned with a building's ability to support the user organisation's economic and professional objectives. On the other hand, serviceability has been described to focus on the capability of a facility to provide a range of performances for which it is designed [21]. However, since those characteristics illustrate more to physical context, therefore it is important to take into consideration the situation factor that caused by the effect of it to the emotional of the user. As agreed by Alho [2] Since that overall usability is influenced by the environment and the user as well as the context, all three components need to be considered. This way usability can be improved not only by making changes in built setting, but also in the context and user settings. [26]. This can be simplified by referring to Figure 1.0.



The Usability Triangle (Rothe 2006)
(Source: Johanna Alho, (2008).
Usability of Workplaces Phase 2, CIB W111 report)

Figure 2.0 : Usability Triangle [26][2]

As simplified by K. Alexander [10], usability, or functionality in use, is concerned with a building's ability to support the user organisation's economic and professional objectives. Usability cannot stand

alone. It is a combination of different attributes impact in the environment and is a matter of context and situation. Lindahl and Granath (2008) argue that usability depends on the situation in which the artifact is used as well as the context the artifact is designed. Nevertheless, the capability of a facility to provide a range of performances for which it is designed does not guarantee usability either and, as Granath and Alexander (2005) argue, might indeed never be able to achieve it.

Therefore, in order to accomplish the organisation mission especially related to business strategy, there are certain attributes or dimensions that illustrates the usability of the shopping centres that can be taken into consideration. One of the previous researcher in usability of built environment, Rasila et. al (2010) has summed up the dimensions of usability which collected by doing thorough literature review. Those theoretical classification and the new empirical classification of usability dimensions as stated in Fig 3.0 below is appropriate example of building usability evaluation tools.

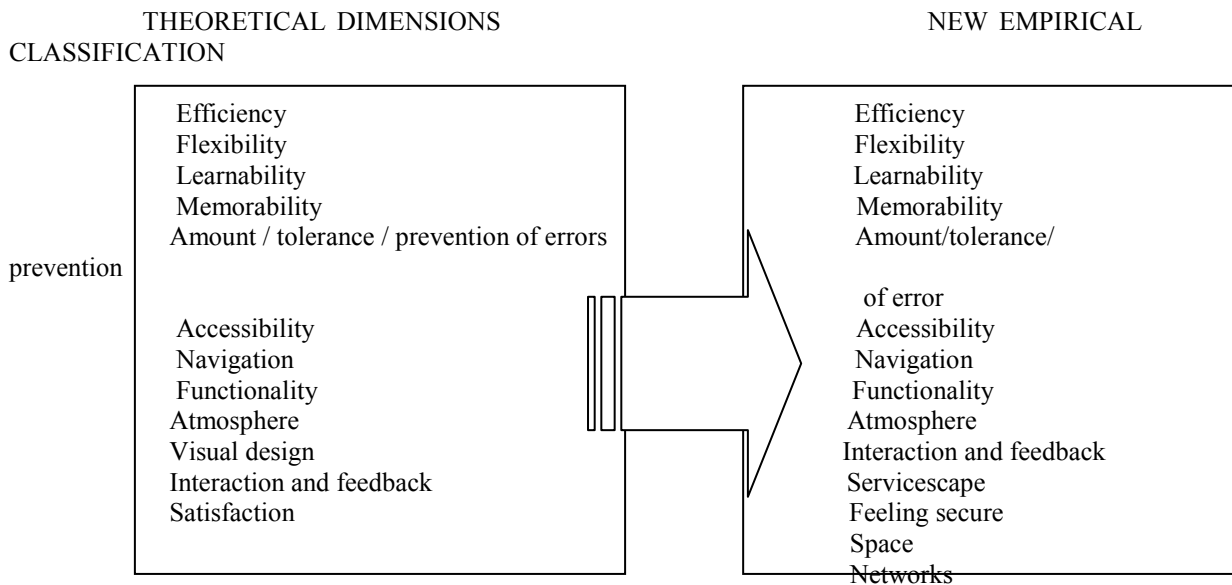


Figure 2.0: Usability Dimensions

7. Conclusion

The aim of this paper is to illustrate the concept of usability through several literature reviews that enhance the involvement of the user in it. This concept is identified as one of tools in evaluating the compatibility of the building with its function and design. Usability definitions through several scholars are highlighted in this paper in order to make clear the purpose of it in designing building especially. Known as one of the solution to overcome problem, usability actually is a hidden quality that can be used as strategic business weapon. Looking at the competitive scenario of shopping centres in Malaysia, usability is the appropriate way in achieving the goals with efficient, effectiveness and satisfaction manners.

8. References

- [1] McGoldrick, P.J. and Thompson M.G. (1992). The Role of Image in the Attraction of the Out-of Town Centre. *The International Review of Retail, Distribution and Consumer Research*, Vol.2, No.1, pp. 81-98.
- [2] Alho, J, Nenonen, S and Nisinen, K (2008), Proceedings from European Facility Management Conference 2008 : *Usability Of Shopping Centre: Components of Usability Rating Tool*, Helsinki, Finland.
- [3] Lim Yoke Mui, N. B., A.Ghafar Ahmad. (2003). *Retail Activity in Malaysia : From Shophouse to Hypermarket*. Paper presented at the Pacific Rim Real Estate Society 9th Annual Conference, University of Queensland and Queensland University of Technology, Brisbane, Australia.
- [4] Ahmad, Z. et. al. (1996). *Basic Retailing*. Shah Alam: Institut Teknologi MARA
- [5] Mohd-Said, Z. A. (1990). *The Structure of Retail Trade in Peninsular Malaysia*. Kuala Lumpur: Arenabuku
- [6] Narains (2006) <http://narains.com/glossary.htm>. assessed: 16.8.2006.
- [7] NAPIC – National Property Information Centre
- [8] Michael Pitt, Z. N. M. (2009). Towards defining shopping centres and their management systems. *Journal Of Retail and Leisure Property*, 8(1), 39-55
- [9] Young Taek Park, C. H. P. (2000). Usability as a hidden dimension of quality. *The Asian Journal on Quality*, 2(2), 46-57.
- [10] Alexander, K. (Ed.) (2006), *Usability of Workplaces*, CIB Report, Publication 306.
- [11] Yusniza Kamarulzaman, F. L. C. L. (2010). Attracting Shoppers to Shopping Malls: The Malaysian Perspective. *Interdisciplinary Journal Of Contemporary Reseach in Business*, 2(3), 185-198.
- [12] Luck, R. (2007). Learning to talk to users in participatory design situations. *Design Studies*, 28, 217-242.
- [13] Sanoff, H (2000) *Community participation methods in design and planning* John Wiley & Sons Inc, New York
- [14] Binder, T (1996) *Learning and knowing with artefacts: an interview with Donald A Schon* AI & Society Vol 10 No 1 pp 51-57
- [15] Stanton, N.A., Young, M., 1998. Ergonomics methods in consumer product design and evaluation. In: Stanton, N. (Ed.), *Human Factors in Product Design*. Taylor and Francis Ltd, UK, pp. 21-52.
- [16] Fagence, M (1977) *Citizen participation in planning* Wheaton & Co, Exeter
- [17] Hastings, A (1998) *Connecting linguistic structures and social practices: a discursive approach to social policy analysis* Journal of Social Policy Vol 27 pp191-211

- [18] Imrie, R (1999) The role of access groups in facilitating accessible environments for disabled people *Disability and Society* Vol 14 No 4 pp 463- 482
- [19] Leggett, W (2002) Reflexive modernization and reconstructing the Third Way: a response to Mouzelis *The Sociological Review* Vol 50 No 3 pp 416- 436
- [20] Hasdogan, G., 1996. The role of user models in product design for the assessment of user needs. *Des. Stud.* 17, 19-33.
- [21] Alexander, K., Fenker, M., Granath, J.Å., Haugen, T., Nissinen, K. (2005). *Proceedings from CIB 2005: Combining Forces – Advancing Facilities Management & Construction through Innovation Series*, Helsinki, Finland.
- [22] Forlizzi, J. and Battarbee, K. (2004) Understanding Experience in Interactive Systems, in *Proceedings of the 2004 Conference on Designing Interactive Systems: Processes Practices, Methods, and Techniques*, pp. 261–268.
- [23] Macdonald, A.S., 1998. Developing a qualitative sense. In: Stanton, N.(Ed.), *Human Factors in Product Design*. Taylor and Francis Ltd,UK, pp. 175-190
- [24] Shaw, C. and Ivens, J. (2002), *Building Great Customer Experiences*, Palgrave Macmillan.
- [25] Schmitt, B. (1999) “Experiential Marketing” *Journal of Marketing Management*, 15(13), pp.53–67.
- [26] Rothe, P., Gersberg, N. & Nenonen, S. (2007): *Usability Attributes of Business Parks*.
- [27] Lindahl, G., & Granath, J. Å. (2008) **Culture and Usability**. Unpublished paper. CIB W111.
- [28] Heidi Rasila , P. R., Heidi Kerosuo. (2009). Dimensions of usability assessment in built environments. *Journal of Facilities Management*, 8(2), 143-153. doi: 10.1108/14725961011041189